Physical Science **Name**_____
DSHS Period _____

Classification of Matter WORKSHEET #1

1. True or False: An element can be broken down into a simpler substance.

2. From the following list of substances, circle the ones that are elements:

silver	alcohol	carbon
carbon dioxide	hydrogen	nitrogen
wood	water	gold
oxygen	sugar	salt
air	sulfur	magnesium chloride

2. In a compound the atoms are _____ combined.
chemically or physically

3. A compound is made up of _____ or more atoms of _____ types which are chemically bonded.

4. Give two examples of a pure substance, a pure substance can be an element or a compound:

1. 2.

5. True or False: A mixture is always made up of a combination of substances.

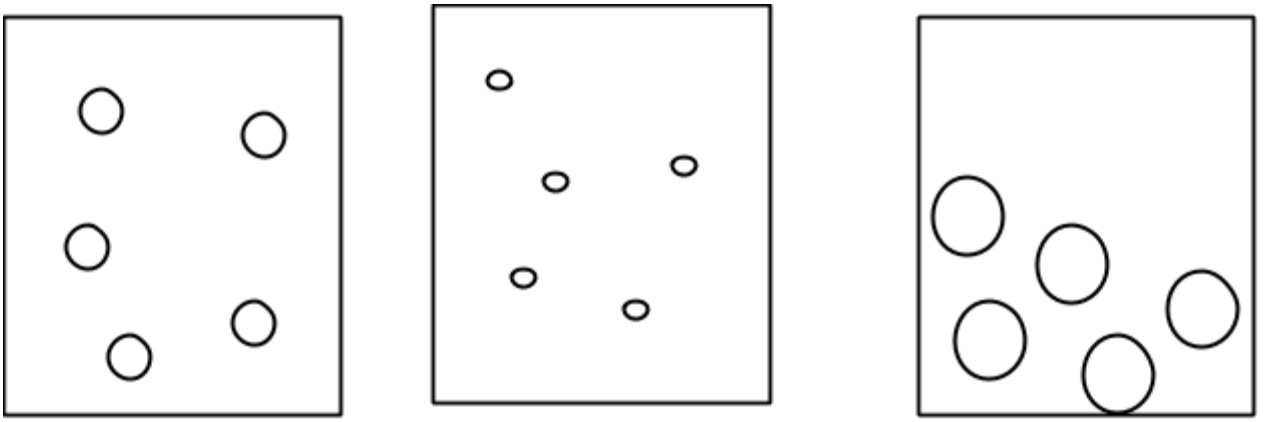
6. In a mixture, substances are not chemically bound and the substances still retain their own unique properties. Because of this, they can easily be sorted or separated.
Circle all of the substances that are examples of a **mixture**.

Steel (Iron and Carbon)	Pepsi Cola	Helium (He)
Trail Mix (M&M's, raisins, peanuts)	Table Salt (NaCl)	Water (H_2O)
Garden Salad	Cinnamon Sugar	Sodium (Na)

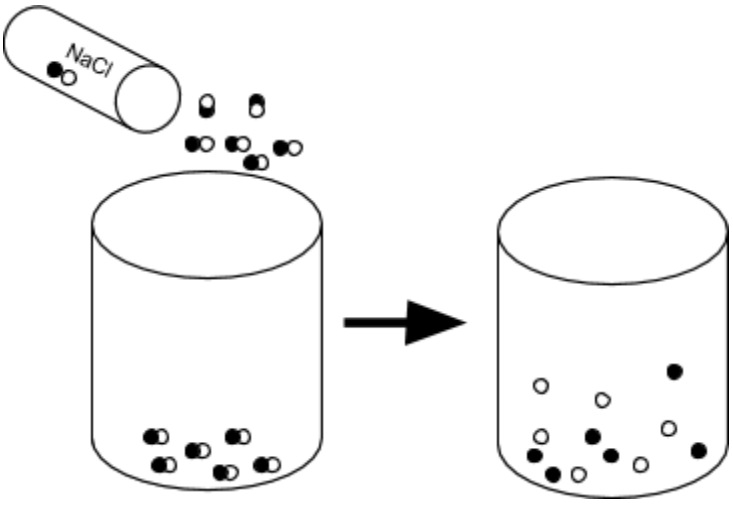
7. Some mixtures are homogenous which means that they are the same throughout or uniform throughout. Other mixtures are heterogenous which means that they are different throughout, taking a sample from different parts of the mixture would result in different composition.
Circle the mixtures are are **homogenous**:

Salt water	Kool-aid	Orange Juice (with pulp)
Potato Salad	Apple Juice	Chicken pot pie
Brass (Copper and Zinc)	Lemonade (with lemon slices)	Coffee (No creamer)

8. Two types of mixtures scatter light, this is called the Tyndall Effect. They are suspensions and colloids. This is because the particle sizes are medium and large. When light hits the particles, it is deflected. Circle the mixtures that would exhibit the Tyndall Effect or the scattering of light. Then label the mixtures based on particle size as a solution, suspension or a colloid.



9. There are different types of homogenous mixtures. One is a **solution**. In a solution there is something dissolved into another thing. The substance being dissolved is called the **solute** and the substance doing the dissolving is called the **solvent.** In the image below, identify the solvent and the solute.



Matter: anything that takes up space & has mass

A. Types of Matter

1. Pure substance: substance that contains ONE kind of particle

a. Element: single substance that cannot be broken down

contains 2 or more types of atoms
of different types bound together

i. 2 or more atoms bound together ---- can be a compound too!

Mixture: Combination of substances that can be easily broken down

a. Heterogeneous: items can be easily identified

i. Suspension: mixture in which particles can be seen and easily separated by settling or filtration

- Mixtures which separate out into layers
- Liquids which must be shaken well
- Particles are large
  - Homogeneous: items are uniform
    - Solution: A homogeneous mixture which does not separate into layers
      - Can see through liquid solutions
      - Particles are small
    - Solvent
    - Solute

b. Homogenous: items cannot be easily identified

i. Colloid:

- Mixtures which does not separate out into layers
- Particles cannot be separated through filtration
- Particles are medium

a. Mass: amount of matter in object (measured in grams [g])

b. Weight: gravitational force acting an object (measured in newtons [N])

c. Volume: amount of space a substance occupies (measured in liters [L] if a liquid or cubed meters [m^3] if a solid)

d. Length (measured in meters [m])

2. Color
3. Odor
4. Luster: How shiny a substance is.
5. Malleability: The ability to be beaten into thin sheets.

6. Ductility: The ability to be drawn into wires.
7. Conductivity: Allows the flow of free electrons. Electricity can move through the material.
8. Hardness: How easily it is scratched.
9. Melting / Freezing / Boiling Point
10. Density

Use figure 1 to answer the following three questions.
Figure 1